mixture of metals, applicable to the manufacture of sheathing for ships and other vessels, bolts, nails, or other fastenings. (Being a communication.) Feb. 17.

John Kibble, of Glasgow, gentleman, for improvements in transmitting power in working machinery where endless belts, chains, or straps, are or may be used. Feb. 17.

William Losh, of Newcastle-upon-Tyne, Esq., for improvements in the manufacture of metal chains for mining and other purposes. Feb. 17.

Alfred Jeffery, of Brunton Works, Limehouse, for improvements in treating wood, and certain other substances required to be exposed to water. Feb. 19.

Alexander Parkes, of Birmingham, artist, for improvements in the manufacture of certain alloys, or combinations of metals, and in depositing certain metals. Feb. 21.

Ezra Jenks Coates, of Bread-street, Cheapside, merchant, for improvements in the forging of bolts, spikes, and nails. Feb. 21.

Henry Charles Howells, of Hay, gentleman, for improvements in the fastenings of parts of bedsteads and other frames. (Being a communication.) Feb. 21.

Thomas Liddell, of Newcastle, engineer, for improvements in apparatus for preventing explosion in steam-boilers. Feb. 21.

William Rouse, of Great Barton, Bury St. Edmunds, wheelwright, for certain improvements in carriages, and in parts of carriages, applicable to various purposes. Feb. 24.

Gaspare Conti, of James-street, Buckingham-gate, gentleman, for improvements in hydraulic machinery, to be used as a motive power. Feb. 24.

John Aitken, of Surrey-square, for improvements in atmospheric railways. Feb. 24.

Archibald Trail, of Great Russell-street, Bloomsbury, for an improvement in the manufacture of sails for ships and other vessels. Feb. 24.

SCOTCH PATENTS.

Granted between the 22nd January and the 22nd of February, 1844.

Thomas Southall, of Kidderminster, Worcestershire, druggist, and Charles Crudgington, of the same place, banker, for improvements in the manufacture of iron and steel. Jan 25.

William Edward Newton, of Chancery-lane, civil engineer, for a new or improved system of machinery, or apparatus for obtaining and applying motive power for propelling on railways or water, and for raising heavy bodies, applicable also to various other purposes, where power is required. (Being a communication from abroad.) Feb. 5.

Philip Walther, of Angel-court, Throgmorton-street, London, merchant, for certain improvements in the construction of steam-engines. (Being a communication from abroad.) Feb. 5.

John Kibble, of Glasgow, gent., for improvements in transmitting power in working machinery where endless belts, chains, or straps are or may be used. Feb. 12.

Hugh Inglis, of Kilmarnock, Ayr, mechanic, for improvements upon locomotive steam-engines, whereby a saving of fuel will be effected, which improvements are applicable to steam-vessels and other purposes, and to the increasing the adhesion of the wheels of railway-engines, carriages, and tenders, upon the lines of rail when the same are in a moist state. Feb. 13.

Ezra Jenks Coates, of Bread-street, Cheapside, London, merchant, for improvements in the forging of bolts, spikes, and nails. (Being a communication from abroad.) Feb. 15.

EXTRAORDINARY ROPE.—We are informed by Mr. J. T. Tregellas, of Truro, the agent for Cornwall for the patent wire-rope, that Mr. Andrew Smith, the patentee at Mill-wall, near London, has just completed a galvanized wire-rope of the astonishing length of 123 miles, which is intended for electrical communication on one of the railroads. We presume this may be confidently designated the longest rope in the world.—*West Briton*.

Correspondence.

MEASURING ROUND TIMBER.

SIR,—If the subject of measuring round timber has not already measured the extent of your patience, time, and paper, I beg to offer a few remarks thereon; and, if you think they will be useful, perhaps you will give them a place in your valuable and, I hope, widely circulated journal. Although the subject has been treated at some length by two of your correspondents, and correctly so too, as far as a frustum of a cone is considered; yet, in my opinion, they have left your correspondent "L.," p. 559 in your last volume, and who first proposed the question, as much in the dark as he was before. Now, it is well known to all men in any wise acquainted with measuring round timber, that the quarter-girth does not give the true content, but that it is a country custom, and has been found quite near enough for buying and selling, as it gives a little to the purchaser for loss in bad knots, sap, and other defects, to say nothing of the loss in shrinking after being cut down and lying some time exposed to the weather; in fact, I believe measuring round timber by the quarter-girth, or what is called forest-measure, is the custom in all parts of the kingdom, London excepted. It also seems nearly the mean between the true area and the inscribed square; for instance, suppose a tree 3 feet 6 inches diameter; the side of the square equal to the full area will be about 3 feet 1 inch 3 parts, the quarter-girth 2 feet 9 inches, and the inscribed square 2 feet 5 inches 8 parts. This proves the practice to be a good one; the outside cants in many, very many, cases are not worth the sawing. But true or false is not the question, it is the content quarter-girth of a supposed conical tree 8 feet long, 6 feet diameter at one end, and 6 inches at the other.

Now, were I called on to measure such a tree, I should consider it an equilateral rectangular prismoid, and proceed as follows: first, by finding the quarter-girth of both ends and the middle; then to the area of the great and less ends and four times the area of the middle section, one-sixth of which will be the mean area, multiplied by the length will be the content quarter-girth. The same rule will also give the content of the frustum.

	Ft.	Ins.	Pts.
Thus, area of great end	22	2	9
Do. less end	0	1	10
Four times the middle section	26	1	5
⅙	48	6	0
Mean area	8	1	0
			10
	80	10	0
			8
Content quarter-girth	646	8	0
As the frustum of a cone:—			
Area of great end	28	3	6
Do. less end	0	2	4
Four times the middle section	33	2	4
⅙	61	8	2
Mean area	10	3	4
			10
	102	9	4
			8
True content	822	2	8

Now, this same frustum, according to the London practice, which does not admit of either tapes or strings, but according to which round timber is measured the same as square timber, that is, by taking the diameter by the callipers in different places as may be agreed on by the buyer and seller, then by adding them up and taking the mean, which is the side of the square in all cases, conical or cylindrical; consequently the content of this supposed frustum of a cone would be 845 feet, *i. e.* 3 ft. 3 in. × 3 ft. 3 in. × 80 ft. = 845 ft. Now this does not seem much above the true content of the above frustum; but, suppose the butt-end of an elm tree 3 feet 6 inches diameter at both ends, and 15 feet long,—the content, according to the London practice:

Ft.	Ins.		Quarter-girth. Ft.	Ins.	Pts.
3	6		2	9	0
3	6		2	9	0
1	9		2	0	9
10	6		5	6	0
12	3	area.	7	6	9 area.
	5				5
61	3		37	9	9
	3				3
183	9		113	5	3

True content:—	Ft.	In.	Pts.
Half circumference	5	6	0
Do. diameter	1	9	0
	4	1	6
	5	6	0
	9	7	6 area.
			5
	48	1	6
			3
	144	4	6

Thus you have 144 feet 4 inches 6 parts = 113 feet 5 inches 3 parts, and 153 feet 9 inches.

So much for custom, which no theory is able to break down, at least in buying timber.

I am, Sir, your well-wisher,

J. H. F.

Brook-street, West-square, Lambeth.

[We insert the above letter, in order to complete the series, although we have received a letter signed "*An Old Bulk*," deprecating the subject as "too elementary." One thing we apprehend has been proved—there are persons who either do not know how to measure the frustum of a cone, or the foundation of the custom in buying and selling timber.—ED.]

METROPOLITAN IMPROVEMENTS.

SIR,—In the table which you did me the honour to insert in last week's paper, an omission occurred in one of the columns, wherein it should have been mentioned that 34, of the 169 houses which have been settled for, are not yet pulled down, although, strange to say, that some of those houses were among the first settled for. I conceive that the commissioners are bound to explain how this has happened.

The Earl of Lincoln has twice offered in Parliament an explanation of the causes of delay which have been complained of. On the third reading of the Bill for enabling the Bank of England to lend money by mortgage on the houses to be built—in answer to Mr. Hume, he said, "he could assure the hon. member and the House that every reasonable diligence was used in carrying out the contemplated improvements. It was necessary that houses which were to be removed should be so gradually, for if all the houses which were intended to be removed were to be taken down and sold at once, their materials would scarcely fetch any thing; he was quite aware of the inconvenience complained of by the hon. member, but he could assure him it was not the fault of the Woods and Forests. In many parts the purchase of the land had not been completed till a short time since, and it was, therefore, impossible to take any steps. He had no doubt, however, that ultimately the constituents of the hon. member for Finsbury would be benefited, for the rating on the houses, instead of being, as it was at present £35,000, would amount to £46,000."

His Lordship surely does not mean to say that he could obtain a better price for the materials of houses pulled down in Hyde-street, Belton-street, and Leicester-square, at one and the same time, than if the houses had been pulled down all in one line.

On the first reading of the Building Bill, the subject of the delays was again mooted by Mr. Duncombe, when Lord Lincoln said that "he was quite aware of the inconvenience to which the hon. member had adverted, but it was one which it was impossible altogether to avoid, and he could assure the hon. member that it was not caused by any want of diligence in

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